FIG. 1

110
HOST
111
SERVER APPLICATION
117
112
PARENT PROCESS
113
DATA RECEIVED FLAG
123
RECONNECTION COMPLETION FLAG
114
RECONNECTION REQUEST MONITORING THREAD
SHARED MEMORY
118
RECONNECTION REQUEST FLAG P
119
RECONNECTION REQUEST FLAG C
140
COPY REQUEST FLAG
115
CHILD PROCESS
116
RECONNECTION REQUEST MONITORING THREAD
141
COPY REQUEST MONITORING THREAD
120
TCP/IP SOCKET EMULATOR MODULE
130
VI
131
VIA MODULE
132
VI
160
HOST
161
CLIENT APPLICATION
162
PROCESS
163
TRANSMISSION INTERMISSION REQUEST FLAG
164
TRANSMISSION INTERMISSION REQUEST MONITORING THREAD
170
TCP/IP SOCKET EMULATOR MODULE
180
VI
181
VIA MODULE
182
VI
10
20
1

FIG. 2

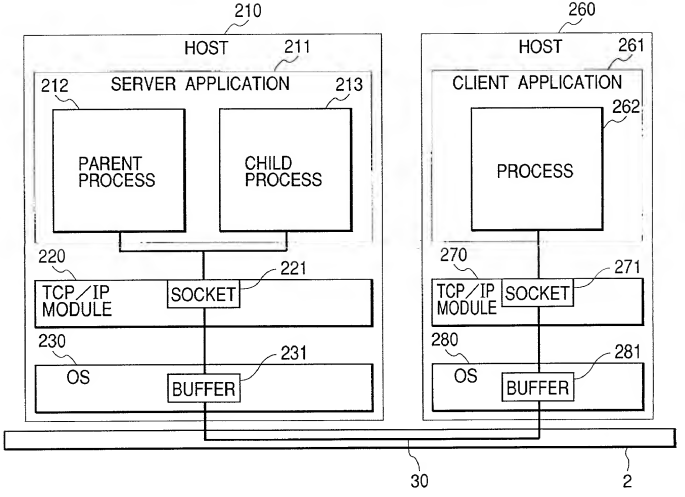

210
HOST
211
212
SERVER APPLICATION
213
PARENT PROCESS
CHILD PROCESS
220
TCP/IP MODULE
SOCKET
221
230
OS
BUFFER
231
260
HOST
261
CLIENT APPLICATION
262
PROCESS
270
TCP/IP MODULE
SOCKET
271
280
OS
BUFFER
281
30
2

FIG. 3

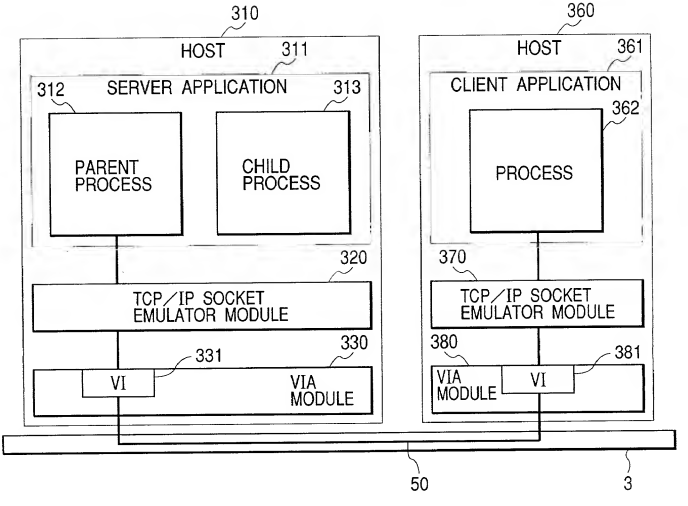

310
HOST
311
312
SERVER APPLICATION
313
PARENT PROCESS
CHILD PROCESS
320
TCP/IP SOCKET EMULATOR MODULE
331
330
VI
VIA MODULE
360
HOST
361
CLIENT APPLICATION
362
PROCESS
370
TCP/IP SOCKET EMULATOR MODULE
380
381
VIA MODULE
VI
50
3

FIG. 4

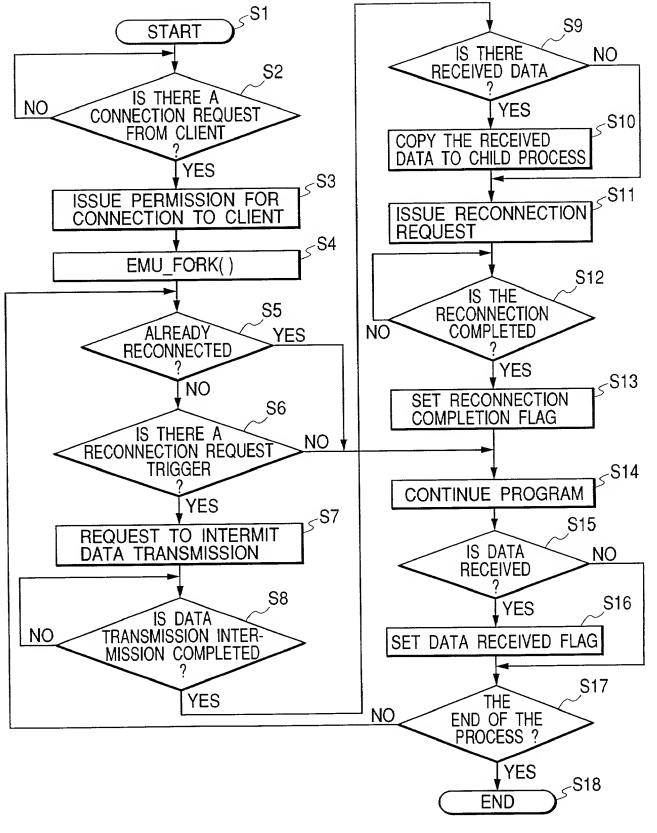

START
S1
IS THERE A CONNECTION REQUEST FROM CLIENT ?
S2
NO
YES
ISSUE PERMISSION FOR CONNECTION TO CLIENT
S3
EMU_FORK( )
S4
ALREADY RECONNECTED ?
S5
YES
NO
IS THERE A RECONNECTION REQUEST TRIGGER ?
S6
NO
YES
REQUEST TO INTERMIT DATA TRANSMISSION
S7
IS DATA TRANSMISSION INTER-MISSION COMPLETED ?
S8
NO
YES
IS THERE RECEIVED DATA ?
S9
NO
YES
COPY THE RECEIVED DATA TO CHILD PROCESS
S10
ISSUE RECONNECTION REQUEST
S11
IS THE RECONNECTION COMPLETED ?
S12
NO
YES
SET RECONNECTION COMPLETION FLAG
S13
CONTINUE PROGRAM
S14
IS DATA RECEIVED ?
S15
NO
YES
SET DATA RECEIVED FLAG
S16
THE END OF THE PROCESS ?
S17
NO
YES
END
S18

FIG. 5

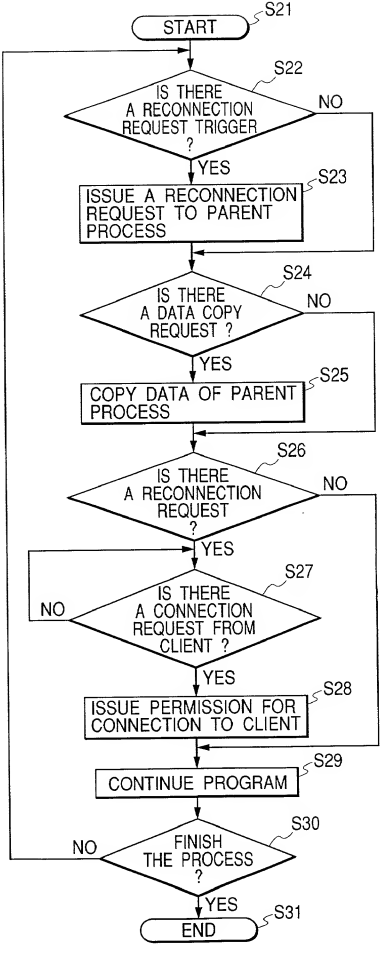

START
S21
IS THERE A RECONNECTION REQUEST TRIGGER ?
S22
NO
YES
ISSUE A RECONNECTION REQUEST TO PARENT PROCESS
S23
IS THERE A DATA COPY REQUEST ?
S24
NO
YES
COPY DATA OF PARENT PROCESS
S25
IS THERE A RECONNECTION REQUEST ?
S26
NO
YES
IS THERE A CONNECTION REQUEST FROM CLIENT ?
S27
NO
YES
ISSUE PERMISSION FOR CONNECTION TO CLIENT
S28
CONTINUE PROGRAM
S29
FINISH THE PROCESS ?
S30
NO
YES
END
S31

FIG. 6

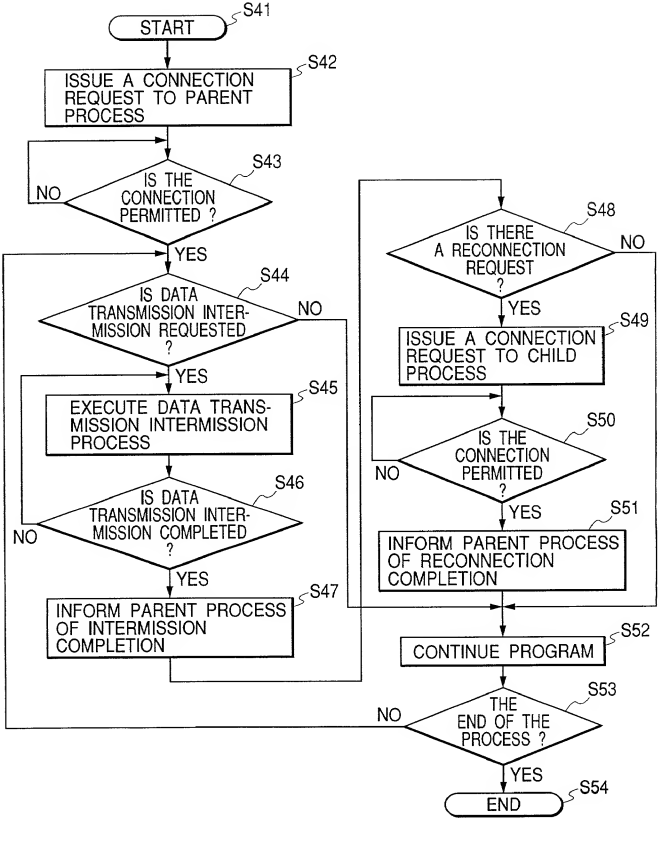

START
S41
ISSUE A CONNECTION REQUEST TO PARENT PROCESS
S42
IS THE CONNECTION PERMITTED ?
S43
NO
YES
IS DATA TRANSMISSION INTERMISSION REQUESTED ?
S44
NO
YES
EXECUTE DATA TRANSMISSION INTERMISSION PROCESS
S45
IS DATA TRANSMISSION INTERMISSION COMPLETED ?
S46
NO
YES
INFORM PARENT PROCESS OF INTERMISSION COMPLETION
S47
IS THERE A RECONNECTION REQUEST ?
S48
NO
YES
ISSUE A CONNECTION REQUEST TO CHILD PROCESS
S49
IS THE CONNECTION PERMITTED ?
S50
NO
YES
INFORM PARENT PROCESS OF RECONNECTION COMPLETION
S51
CONTINUE PROGRAM
S52
THE END OF THE PROCESS ?
S53
NO
YES
END
S54

FIG. 7

EVENT	PARENT PROCESS	CHILD PROCESS
RECV	—	T3
SEND	—	T4
CLOSE	T1	—
ABORT OF PROCESS	T2	—

FIG. 8

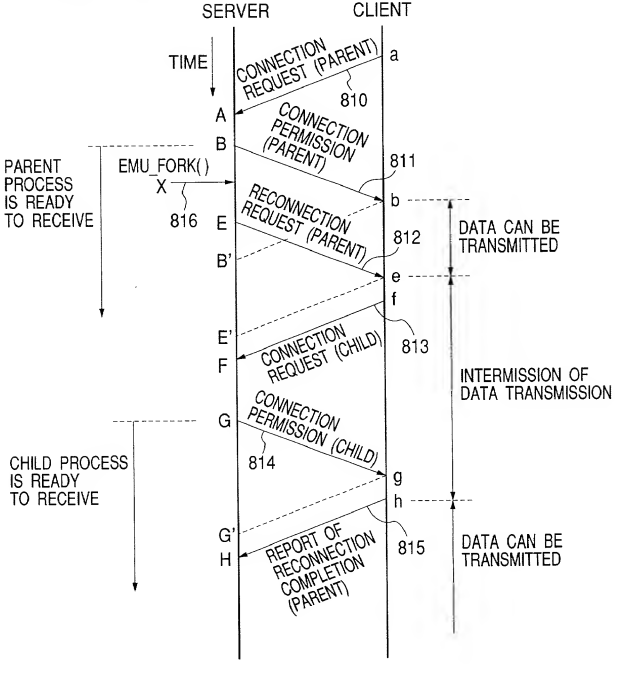
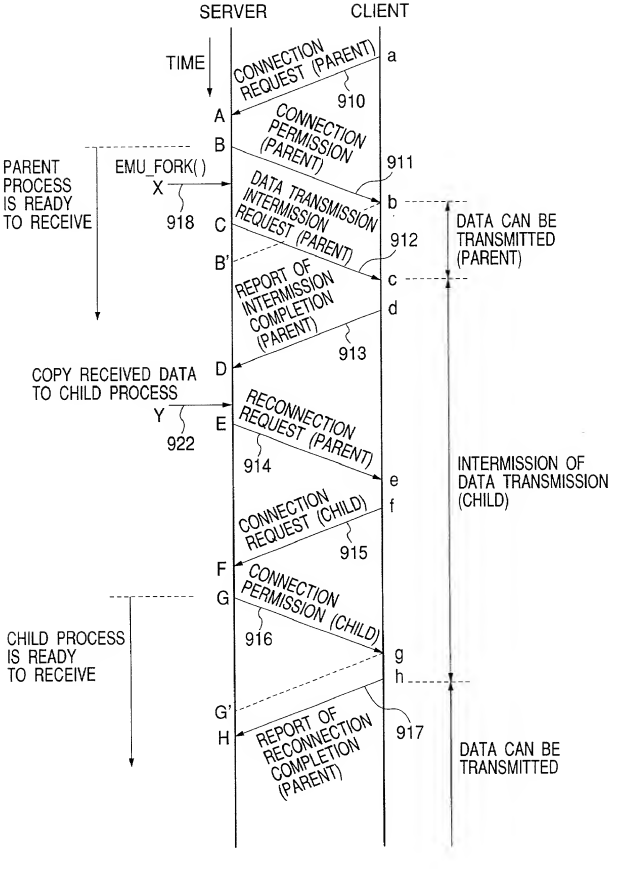


FIG. 9


SERVER
CLIENT
TIME
CONNECTION REQUEST (PARENT)
a
910
A
CONNECTION PERMISSION (PARENT)
B
911
PARENT PROCESS IS READY TO RECEIVE
EMU_FORK( )
X
DATA TRANSMISSION INTERMISSION REQUEST (PARENT)
b
DATA CAN BE TRANSMITTED (PARENT)
918
C
912
B'
REPORT OF INTERMISSION COMPLETION (PARENT)
c
d
913
COPY RECEIVED DATA TO CHILD PROCESS
D
RECONNECTION REQUEST (PARENT)
Y
E
922
914
e
INTERMISSION OF DATA TRANSMISSION (CHILD)
CONNECTION REQUEST (CHILD)
f
915
F
CONNECTION PERMISSION (CHILD)
G
916
CHILD PROCESS IS READY TO RECEIVE
g
h
G'
H
REPORT OF RECONNECTION COMPLETION (PARENT)
917
DATA CAN BE TRANSMITTED